

# **SAFETY ACTION BULLETIN**

DEPARTMENT OF HEALTH  
SCOTTISH OFFICE HOME AND HEALTH DEPARTMENT  
WELSH OFFICE  
DEPARTMENT OF HEALTH AND SOCIAL SERVICES  
(NORTHERN IRELAND)

To Chief Executives of:

Regional Offices	)	
District Health Authorities	)	
NHS Trusts	)	
Directly Managed Units	)	
The National Hospital for Neurology and Neurosurgery	)	FOR ACTION
The Eastman Dental Hospital	)	
Special Hospitals Service Authority	)	
Health Boards (Scotland)	)	
Health and Social Services Boards (Northern Ireland)	)	

SAB(94)49

November 1994

## **PORTABLE, CORDLESS AND CELLULAR TELEPHONES: INTERFERENCE WITH MEDICAL DEVICES**

### **SUMMARY**

The Department has received reports of mobile and cellular telephones interfering with the operation of medical devices. Portable, cordless and cellular telephones should not be used close to patient monitoring, infusion or life support equipment because such interference may effect their normal operation with potentially serious patient consequences. Wherever possible, fixed communications should be used.

### **ACTION**

The following information should be brought to the attention of all those who need to know or be aware of it. This will include medical, nursing, professional and technical staff associated with the following: all wards and departments, EME, EBME and medical physics, together with: equipment maintenance engineers, safety liaison officers, security staff.

Staff who are issued with portable, cordless or cellular telephones (or two-way radios) should not use them close to patient monitoring, infusion or life support equipment.

Patients, contractors and other visitors should be discouraged from using such telephones in hospitals.

Managers should identify those areas (eg ITU) where susceptible devices may exist and areas adjacent to them (eg reception) and ensure that staff and visitors to those areas are aware of any restrictions in the use of these telephones. For example consideration should be given to the display of warning notices. Whenever possible fixed communications should be used.

The earlier advice given in SIB(87)21 remains valid and should be followed.

### **BACKGROUND**

1. Incidents involving interference have been reported. Amongst these were the reprogramming of an infusion pump resulting from a patient using a mobile telephone and the alteration of the tidal volume and frequency setting of a ventilator caused by a contractor's mobile telephone. Tests commissioned by the Department have demonstrated that electromagnetic fields comparable to those which exist up to a few meters away from an operating portable telephone can cause some medical equipment to malfunction.

2. A recently published standard, IEC 601-1-2, specifies limits for the susceptibility of medical equipment to electromagnetic interference. Even equipment which complies with this standard, however, will only be immune to defined levels of interference. Hazardous malfunctions may still occur if other equipment which is designed to radiate radio frequency energy (such as portable telephones) is used in close proximity. The standard also permits

less hazardous malfunctions, such as life supporting equipment stopping but giving an alarm. Existing equipment, which will remain in use for many years, cannot be expected to comply with this new standard and may suffer interference even from portable telephones used a few metres away.

3. The severity of the effects of mobile phones on medical equipment can vary according to the particular type of phone and the medical equipment concerned. Because of the unpredictability of the effects of both the effects and the distance at which they may occur the Department can give no advice on recommended safe distances. However, early indications are that, in general, cordless PABX systems present a lower risk than cellular telephones.
4. The Department is **also** concerned that any bans or restrictions on the use of portable telephones should take account of the benefits that the use of such systems may offer. To allow these benefits to be realised, use should be allowed wherever safety considerations permit. Total bans effecting whole sites are not favoured because they are very difficult to enforce and may quickly fall into disrepute (if mobile phones are illegally used but no harmful effects are observed). It is thought that bans in limited, but specific, areas are more likely to be effective.
5. It must also **be noted** that cellular telephones should be considered to be 'in use' whenever they are switched on, since these phones transmit at regular intervals, even if no calls are made.
6. Managers and users need to be aware of this potential problem. Due to the many different communication methods and range of devices used in hospitals precise means to prevent this potential hazard will need to be determined locally.
7. The Department will release further advice and guidance when the results of current work become available.

## ENQUIRIES

8. Technical enquiries regarding this Bulletin should be addressed as follows:

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## HOW TO REPORT ADVERSE INCIDENTS (DEFECTS)

All staff working in a healthcare environment have a responsibility to report any incident that occurs at work involving medical devices, equipment or materials to the Department of Health. Guidance for reporting such incidents is contained in Health Service Guidelines, HSG(93)13, issued in June 1993. If you are in any doubt about the reporting procedure please seek advice from your line manager or from the Department of Health.

NOTE: The UK Territorial Health Boards of Northern Ireland, Scotland and Wales' equivalents to HSG(93)13 are:

Northern Ireland — PEL(93)36 issued in July 1994;  
Scotland — NHS Circular 1991 (Gen)24, issued in September 1991;  
Wales — WHC (89)26, issued in August 1989.